Training in fever case management and use of malaria rapid diagnostic testing kits improved fever case management in Uganda

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Background: In Africa, there is poor access to diagnostic tests; malaria is typically diagnosed clinically, though presumptive treatment results in significant overuse of antimalarials and delayed treatment of actual causes of fever. The WHO currently recommends antimaralial treatment for only laboratory confirmed malaria. Malaria rapid diagnostic tests (RDTs) may offer a reliable alternative, but effective training for health workers is a key challenge in RDT implementation. We tested the effectiveness of the training on use of RDTS in fever case management.

Methods: Clinicians at peripheral health centers without microscopy in two districts in a low endemic zone in Uganda were trained for two days and immediately followed up in their health facilities to observe performance and offer additional targeted on site training. Training covered clinical evaluation, selection of patients for RDT testing, performing and interpretation of RDT tests and treatment of patients with negative and positive RDT results. Data on practices in management of patients with suspected malaria before and after the training were collected and compared.Data on out patient consultations for 10 consecutive days in the pre and post training period was compared.

Results: Data revealed appropriate use of RDTs and improved fever case management; there was a reduction in proportion of patients; diagnosed as Malaria [61% to 26% ($p = 0.000$)] amongst the under fives and from 52.3% to 14.5% ($p = 0.000$)amongst adults above 5yrs, prescribed antimalarials from 97% to 80% ($p = 0.000$) among the under fives and from 94% to 86% ($p = 0.000$) among the above 5yrs, with malaria treated with antibiotics among those above 5yrs from 55% to 40% ($p = 0.000$), with malaria given both antimalarials and antibiotics from 63% to 47% ($p = 0.000$) amongst the under fives and from 46% to 29% ($p = 0.000$) amongst those above 5yrs. The training contributed to rational use of antimalarials; the proportion of patients with a negative RDT who received antimalarials in the two facilities 12% compared to 50-70% who receive antimalarials despite a negative blood smear in sites with microscopy.

Conclusion: The training in use of Malaria RDTs in fever case management substantially lead to rational use of antimalarials and antibiotics.

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Antibacterial effects of *Humulus lupulus L.* extract on topical staphylococcal infection in BALB/c Mice cornea

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Background: Staphylococcus aureus is an opportunistic pathogen and the most common cause of bacterial keratitis that can result in irreversible corneal scarring, a pathologic effect that reduces visual acuity and can lead to blindness. *Humulus lupulus L.* flower complex has multiple therapeutic properties such as antibiotic effects against some gram positive bacteria and fungi. In the present research, topical anti-staphylococcus aureus effects of hydroalcoholic extract of *Humulus lupulus L.* flowers in corneal infection induced by staphylococcus aureus were investigated in mice.

Methods: At first, staphylococcus aureus were inoculated into right cornea of animals under anesthesia by making parallel scars. One, three, five, seven and nine days post-inoculation, the eyes were observed carefully under microscope. In observations, eyes were scored according to the area and the degree of opacity. In order to assess the antibacterial effects of *Humulus lupulus L.*, the extract was administered in form of eye drop at 1%, 5% and 10% concentrations. Treatments were started twice daily as soon as the first opacity was observed and continued for one week. The first sign of corneal infection with opacity was observed after three days of bacterial inoculation as compared with the normal eye.

Results: The intensity of opacity was progressed time dependently in a manner that maximum opacity of the whole cornea was obvious in more than half of animals, after nine days. Administration of the *Humulus lupulus L.* extract 10% topically, reduced corneal opacity and consequently the infection. Introducing animal models of ocular diseases such as bacterial infection in cornea has special importance in ocular research.

Conclusion: Effective components existing in *Humulus lupulus L.* flower extract are mainly resins and essence which among them, resins has special importance and seems to be responsible for its antibiotic effects.

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Up regulation of IRF-2 in West Nile Virus infection: Implications for establishment of viremia in the brain leading to encephalitis

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Background: A proportion of patients afflicted with WNV can develop neuromuscular degenerative diseases and potentially fatal encephalitis. However, host immuno-